ATTACHMENT E - MONITORING AND REPORTING PROGRAM

TABLE OF CONTENTS

I. General Monitoring Provisions 2
II. Monitoring Locations 3
III. Effluent Monitoring Requirements 3
A. Internal Monitoring Locations MI-001 through MI-004 and MI-007 (Low Volume Wastes) 3
B. Internal Monitoring Location MI-005 and MI-008 (Cooling Tower Blowdown) 4
C. Total IBCS Effluent Monitoring Location C-001 4
IV. Whole Effluent Toxicity Testing Requirements 5
A. Chronic Toxicity Monitoring 5
B. Toxicity Reduction Evaluation 6
V. Receiving Water Monitoring Requirements. 7
VI. Other Monitoring Requirements 8
A. Priority Pollutant Monitoring 8
B. Regional Watershed/Ocean Monitoring 8
C. Special Studies 8
VII. Reporting Requirements 9
A. General Monitoring and Reporting Requirements 9
B. Self Monitoring Reports 10
C. Discharge Monitoring Reports 11
D. Other Reports 11

LIST OF TABLES

Table 1. Monitoring Locations 3
Table 2. Effluent Monitoring Requirements for Low Volume Wastes 3
Table 3. Effluent Monitoring Requirements for Cooling Tower Blowdown 4
Table 4. Effluent Monitoring Requirements for Total IBCS Effluent MC-001A 4
Table 5. Effluent Monitoring Requirements for Combined HARRF and IBCS Effluent MC-001B 5
Table 6. Approved Tests for Chronic Toxicity 6
Table 7. Receiving Water Monitoring Requirements 7
Table 8. Surf Zone Monitoring Stations 7
Table 9. Reporting Schedule 10
Table 10. Regional Water Board Address 11
Table 11. State Water Board Address 11

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (CFR) at 40 CFR 122.48 requires that all NPDES permits specify monitoring and reporting requirements. The California Water Code (CWC) Sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This Monitoring and Reporting Program establishes monitoring and reporting requirements that implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of this Regional Water Board.

B. Monitoring must be conducted according to United States Environmental Protection Agency (USEPA) test procedures approved at 40 CFR Part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act* as amended, unless other test procedures are specified in Order No. R9-2005-0139 and /or this Monitoring and Reporting Program (MRP) and/or this Regional Water Board.

C. A copy of the monitoring reports signed, and certified as required by Attachment D, Reporting Requirement E.2, of Order No. R9-2005-0139, shall be submitted to the Regional Water Board at the address listed in Section VII.B.6 of this MRP.

D. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by Order No. R9-2005-0139 and this MRP, and records of all data used to complete the application for Order No. R9-2005-0139. Records shall be maintained for a minimum of five years from the date of the sample, measurement, report, or application. This period may be extended by request of this Regional Water Board or by the USEPA at any time.

E. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services or by a laboratory approved by this Regional Water Board.

F. The Discharger shall report in its cover letter all instances of noncompliance not reported under Attachment D, Section E.5 of Order No. R9-2005-0139 at the time monitoring reports are submitted. The reports shall contain the information listed in Attachment D, Section E.5 of Order No. R9-2005-0139.

G. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their

continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.

H. Monitoring results shall be reported at intervals and in a manner specified in Order No. R9-2005-0139 or in this Monitoring and Reporting Program.

I. This Monitoring and Reporting Program may be modified by this Regional Water Board as appropriate.

II. MONITORING LOCATIONS

The Discharger shall establish the monitoring locations listed in *Table 1. Monitoring Locations* to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order.

Table 1. Monitoring Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
I-001	MI-001	PEP evaporative cooler blowdown, prior to combining with any other wastewaters.
I-002	MI-002	PEP reverse osmosis brine, prior to combining with any other wastewaters.
I-003	MI-003	PEP deionization brine, prior to combining with any other wastewaters.
I-004	MI-004	PEP heat recovery blowdown, prior to combining with any other wastewaters.
I-005	MI-005	PEP cooling tower blowdown, prior to combining with any other wastewaters.
I-008	MI-008	Iceoplex cooling tower blowdown, prior to combining with any other wastewaters.
C-001	MC-001A	Total IBCS effluent after dechlorination and prior to combining with any other wastewater.
C-001	MC-001B	Combined effluent after commingling with effluent from HARRF and prior to combining with any other wastewater.
--	MR-001	Surf Zone Monitoring Stations

III. EFFLUENT MONITORING REQUIREMENTS

A. Internal Monitoring Locations MI-001 through MI-004 and MI-007 (Low Volume Wastes)

1. The Discharger shall monitor effluent at internal monitoring locations MI-001 through MI-004 and MI-007 as specified in *Table 2. Effluent Monitoring Requirements for Low Volume Wastes.*

Table 2. Effluent Monitoring Requirements for Low Volume Wastes

Constituent[1]	Units	Sample Type	Frequency
Flow [2]	GPD	Continuous	Continuous
pH	Units	Grab/Continuous	Semi-annual
Total Suspended Solids	mg/L	24-hr composite	Semi-annual
	lbs/day [3]	Calculated [3]	
Oil and Grease	mg/L	Grab	Semi-annual
	lbs/day [3]	Calculated [3]	

[1] All parameters shall be analyzed by the methods specified in 40 CFR 136.3.
[2] Flow shall be monitored prior to combining with effluent from HARRF and after combining with effluent from HARRF.
[3] lbs/day shall be calculated by the discharger for each monitoring event using the following formula:
lbs/day = 0.00834 * effluent concentration limit (ug/l) * Q
where: Q = flow rate, million gallons per day (MGD)

B. Internal Monitoring Location MI-005 and MI-008 (Cooling Tower Blowdown)

1. The Discharger shall monitor effluent at internal monitoring locations MI-005 and MI-008 as specified in *Table 3. Effluent Monitoring Requirements for Cooling Tower Blowdown.*

Table 3. Effluent Monitoring Requirements for Cooling Tower Blowdown

Constituent[1]	Units	Sample Type	Frequency
Flow [2]	MGD	Continuous	Continuous
pH	Units	Grab/Continuous	Semi-annual
Free Available Chlorine	µg/L	Grab/Continuous	Semi-annual
	lbs/day [3]	Calculated [3]	
Chromium, total	mg/L	24-hr composite	Semi-annual
	lbs/day [3]	Calculated [3]	
Zinc, total	ml/L	Grab	Semi-annual
Remaining Priority Pollutants [4]	µg/L	24-hr composite	Annual

[1] All parameters shall be analyzed by the methods specified in 40 CFR section 136.3.
[2] Flow shall be monitored prior to combining with effluent from HARRF and after combining with effluent from HARRF.
[3] lbs/day shall be calculated by the discharger for each monitoring event using the following formula:
lbs/day = 0.00834 * effluent concentration limit (ug/L) * Q
where: Q = flow rate, million gallons per day (MGD)
[4] The Discharger shall monitor for the priority pollutants listed in Attachment H of Order No. R9-2005-0139.

C. Total IBCS Effluent Monitoring Location C-001

1. The Discharger shall monitor the total IBCS effluent at combined monitoring location MC-001A as specified in *Table 4. Effluent Monitoring Requirements for Total IBCS Effluent MC-001A*.

Table 4. Effluent Monitoring Requirements for Total IBCS Effluent MC-001A

Constituent[1]	Units	Sample Type	Frequency
Flow [2]	MGD	Continuous	Continuous
pH	Units	Grab/Continuous	Weekly
Residual Chlorine	µg/L	Grab/Continuous	Weekly
	lbs/day [3]	Calculated [3]	
Temperature	°F	Grab/Continuous	Weekly
Suspended Solids	mg/L	24-hr composite	Monthly
	lbs/day [3]	Calculated [3]	
Settleable Solids	ml/L	Grab	Monthly
Oil and Grease	mg/L	Grab	Monthly
	lbs/day [3]	Calculated [3]	
Turbidity	NTU	24-hr composite	Monthly
Chronic Toxicity	TUc	24-hr composite	Annually
Priority Pollutants [4]	µg/L	24-hr composite	[5]

[1] All parameters shall be analyzed by the methods specified in 40 CFR section 136.3.
[2] Flow shall be monitored prior to combining with effluent from HARRF and after combining with effluent from HARRF.
[3] lbs/day shall be calculated by the discharger for each monitoring event using the following formula:

lbs/day = 0.00834 * effluent concentration limit (ug/L) * Q
where: Q = flow rate, million gallons per day (MGD)

[4] The Discharger shall monitor for the priority pollutants as specified in Attachment H of Order No. R9-2005-0139.

[5] Priority Pollutant monitoring shall be conducted quarterly during the first year of operation, and one more time approximately one year prior to the expiration date of the Order.

2. The City shall monitor the combined effluent from HARRF and IBCS at MC-001B as specified in *Table 5. Effluent Monitoring Requirements for Combined HARRF and IBCS Effluent MC-001B*.

Table 5. Effluent Monitoring Requirements for Combined HARRF and IBCS Effluent MC-001B

Parameter[1]	Units	Sample Type	Minimum Sampling Frequency
Flow [2]	MGD	Continuous	Continuous
Temperature	°F	Grab	Weekly

[1] All parameters shall be analyzed by the methods specified in 40 CFR 136.3.

[2] Total flow of both HARRF and IBCS effluent.

IV. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Chronic Toxicity Monitoring

Critical life stage toxicity tests shall be performed to measure chronic toxicity (TUc). Testing shall be performed using methods outlined in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (Chapman, G.A., D.L. Denton, and J.M. Lazorchak, 1995) or *Procedures Manual for Conducting Toxicity Tests Developed by the Marine Bioassay Project* (SWRCB, 1996).

Chronic toxicity is to be calculated using the following formula:

$$TUc = \frac{100}{NOEL}$$

Where: No Observed Effect Level (NOEL) is expressed as the maximum percent effluent or receiving water that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test as listed in Appendix II of the 2001 Ocean Plan.

Other tests may be used, if they have been approved for such testing by the State Water Board. Dilution and control water should be obtained from an unaffected area of the receiving waters. The brine from the IBCS shall meet the chronic toxicity effluent limitation after initial dilution of the effluent has taken place. The chronic toxicity test species are listed in *Table 6. Approved Tests for Chronic Toxicity*.

Table 6. Approved Tests for Chronic Toxicity

Species	Test	Tier [1]	Reference [2]
giant kelp, *Macrocystis pyrifera*	percent germination; germ tube length	1	a, c
red abalone, *Haliotis rufescens*	abnormal shell development	1	a, c
oyster, *Crassostrea gigas*; mussels, *Mytilus spp*.	abnormal shell development; percent survival	1	a, c
urchin, *Strongylocentrotus purpuratus*; sand dollar, *Dendraster excentricus*	percent normal development	1	a, c
urchin, *Strongylocentrotus purpuratus*; sand dollar, *Dendraster excentricus*	percent fertilization	1	a, c
shrimp, *Homesimysis costata*	percent survival; growth	1	a, c
shrimp, *Mysidopsis bahia*	percent survival; fecundity	2	b, d
topsmelt, *Atherinops affinis*	larval growth rate; percent survival	1	a, c
Silversides, *Menidia beryllina*	larval growth rate; percent survival	2	b, d

[1] First tier methods are preferred for compliance monitoring. If first tier organisms are not available, the discharger can use a second tier test method following approval by the Regional Water Board.

[2] Protocol References:

a. Chapman, G.A., D.L. Denton, and J.M. Lazorchak. 1995. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms. U.S. EPA Report No. EPA/600/R-95/136.

b. Klemm, D.J., G.E. Morrison, T.J. Norberg-King, W.J. Peltier, and M.A. Heber. 1994. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Marine and Estuarine Organisms. U.S. EPA Report No. EPA-600-4-91-003.

c. SWRCB 1996. Procedures Manual for Conducting Toxicity Tests Developed by the Marine Bioassay Project. 96-1WQ.

d. Weber, C.I., W.B. Horning, I.I., D.J. Klemm, T.W. Nieheisel, P.A. Lewis, E.L. Robinson, J. Menkedick and F. Kessler 9eds). 1998. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms. EPA/600/4-87/028. National Information Service, Springfield, VA.

B. Toxicity Reduction Evaluation

If requested by this Regional Water Board, the City shall develop a Toxicity Reduction Evaluation (TRE) workplan in accordance with the TRE procedures established by the U.S. EPA in the following guidance manuals:

1. Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (EPA/600/2-88/070)

2. Toxicity Identification Evaluation, Phase I (EPA/600/6-91/005F)

3. Methods for Aquatic Toxicity Identification Evaluations, Phase II (EPA/600/R-92/080)

4. Methods for Aquatic Toxicity Identification Evaluations, Phase III (EPA/600/R-92/081)

If toxicity effluent limitations identified in Discharge Specification IV.B of this Order are exceeded, then within 15 days of the exceedance, the discharger shall begin conducting six additional toxicity tests over a six month (at least one sample per calendar month) period and provide the results to the Regional Water Board. The additional monthly toxicity tests will be incorporated into the semiannual discharge monitoring reports submitted pursuant to this MRP.

If the additional monthly tests indicate that toxicity effluent limitations are being consistently violated (at least three exceedances out of the six tests), the Regional Water Board may recommend that the discharger conduct a TRE and a Toxic Identification Evaluation (TIE), as identified in the approved TRE workplan.

If the City conducts the TRE/TIE, the City shall, within 15 days of completion of the TRE/TIE, submit the results of the TRE/TIE, including a summary of findings, identified sources of toxicity, a list of corrective actions necessary to achieve consistent compliance with all the toxicity limitations of this Order and prevent recurrence of violations of those limitations and a time schedule for implementations of such corrective actions. The corrective actions and time schedule shall be modified at the direction of the Regional Water Board.

V. RECEIVING WATER MONITORING REQUIREMENTS.

The Discharger shall monitor temperature as specified in *Table 7. Receiving Water Monitoring Requirements* at the surf zone monitoring stations (MR-001) described in *Table 8. Surf Zone Monitoring Stations*.

Table 7. Receiving Water Monitoring Requirements

Parameter[1]	Units	Sample Type	Minimum Sampling Frequency
Temperature	°F	Grab	Weekly

[1] Monitoring and analysis shall be conducted in accordance with 40 CFR 136.

Table 8. Surf Zone Monitoring Stations

Monitoring Location Name	Surf Zone Monitoring Location Description
S1	Surf Zone; 8,000 ft south of the outfall
S2	Surf Zone; 4,500 ft south of the outfall
S3	Surf Zone; 2,500 ft south of the outfall
S4	Surf Zone; 500 ft south of the outfall
S5	Surf Zone; 500 ft north of the outfall
S6	Surf Zone; 4,000 ft north of the outfall
S7	Surf Zone; 8,000 ft north of the outfall

VI. OTHER MONITORING REQUIREMENTS

A. Priority Pollutant Monitoring

This Regional Water Board is requiring, as part of the MRP, that the City conduct effluent monitoring for the priority pollutants listed in Attachment H.

This monitoring shall be conducted at the following locations:

1. Effluent Outfall (MC-001A).

2. Receiving water (for pH only). Samples for pH shall be collected at offshore water quality monitoring stations described in Attachment E to Order No. R9-2005-0101, NPDES No. CA0107981. Sampling shall occur at frequencies that are concurrent with the monitoring protocol outlined in Attachment E to Order No. R9-2005-0101; NPDES No. CA0107981. The results shall be used to determine compliance with the Thermal Plan for the discharge from the IBCS.

The City shall conduct two priority pollutant monitoring studies as specified in Attachment H. The first monitoring study shall be conducted quarterly for the first year of facility operation (four monitoring events). The results of the quarterly priority pollutant monitoring shall be submitted to this Regional Water Board within 3 months of completing the fourth monitoring event, and no later than November 1, 2006. The second priority pollutant monitoring study shall be conducted approximately one year prior to the permit expiration. The final priority pollutant monitoring event shall be conducted between March 1, 2009 and April 31, 2009 and include Phase II effluent if possible. The results of the priority pollutant monitoring data shall be submitted at least 180 days prior to the expiration date of this Order and shall be submitted with the Report of Waste Discharge.

B. Regional Watershed/Ocean Monitoring

The City shall participate and coordinate with state and local agencies and other dischargers in the San Diego Region in development and implementation of a regional watershed or ocean monitoring program for the Pacific Ocean as directed by this Regional Water Board. The intent of a regional monitoring program is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled resources of the region. During the coordinated monitoring effort, the City's sampling and analytical effort may be reallocated to provide a regional assessment of the impact of discharges to the Pacific Ocean.

C. Special Studies

Core monitoring may include intake monitoring, effluent monitoring, receiving water monitoring, and groundwater monitoring. This Order includes core monitoring for effluent. In addition to core monitoring requirements, the City may be required to conducted additional monitoring. Special studies are intended to be short-term and designed to address specific

research or management issues that are not addressed by the routine core monitoring program. The City shall implement special studies as directed by this Regional Water Board.

VII. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The City shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping and the general monitoring and reporting requirements below. In cases where the monitoring and reporting requirements contained within this section, and the Standard Provisions (Attachment D) conflict, the more stringent of the two requirements apply.

2. The City shall file a new Report of Waste Discharge not less than 180 days prior to the following:

   a. Addition of any industrial waste to the discharge or the addition of a new process or product resulting in a change in the character of the wastes.

   b. Significant change in disposal method (e.g. change in the method of treatment which would significantly alter the nature of the waste).

   c. Significant change in disposal area (e.g. moving the discharge to a disposal area significantly removed from the original area, potentially causing different water quality or nuisance problems).

   d. Increase in flow beyond that specified in this Order.

   e. Other circumstances, which result in a material change in character, amount, or location or the waste discharge.

3. The City must notify this Regional Water Board, in writing, at least 30 days in advance of any proposed transfer of this facility to a new discharger. The notice must include a written agreement between the existing and new discharger containing a specific date for the transfer of this Order's responsibility and coverage between the current discharger and the new discharger. This agreement shall include an acknowledgment that the existing discharger is liable for violations up to the transfer date and that the new discharger is liable after the transfer date.

4. Except for data determined to be confidential, all reports prepared in accordance with the terms of this Order shall be available for public inspection at the offices of the California Regional Water Quality Control Board, San Diego Region and the United States Environmental Protection Agency, Region IX. As required by the Clean Water Act, Reports of Waste Discharge, this Order, and effluent monitoring data shall not be considered confidential.

B. Self Monitoring Reports

1. At any time during the term of this permit, the City, after notification by the State or Regional Water Board, may be required to electronically submit self-monitoring reports. Until such time as electronic submission of Self Monitoring Reports is required, the City shall submit self-monitoring reports in accordance with the requirements described further below.

2. The City shall submit quarterly and annual Self Monitoring Reports including the results of all required monitoring and monitoring conducted in addition to the minimum required monitoring and using USEPA approved test methods or other test methods specified in this Order. Quarterly reports shall be due on May 1, August 1, November 1, and February 1 following each calendar quarter; Annual reports shall be due on February 1 following each calendar year.

3. Monitoring periods for all required monitoring shall commence according to the schedule in *Table 9. Reporting Schedule*.

Table 9. Reporting Schedule

Sampling Frequency	Monitoring Period Starts On…	Monitoring Period	Reporting Due with SMR on…
Continuous	**June 8, 2005**	All	First day of second month following month of sampling
Weekly	**June 12, 2005**	Sunday through Saturday	First day of second month following month of sampling
Monthly	**July 1, 2005**	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 1 August 1 November 1 February 1
Semi-annual	**July 1, 2005**	January 1 through June 30 July 1 through December 31	August 1 February 1
Annual	**January 1, 2006**	January 1 through December 31	February 1

4. The City shall report with each sample result the applicable Minimum Level (ML) and the laboratory current Method Detection Limit (MDL) as determined by the procedure in 40 CFR Part 136.

5. Self Monitoring Reports must be submitted to the Regional Water Board, signed and certified as required by the standard provisions (Attachment D).

6. The Discharger shall attach a cover letter to its Self Monitoring Report. The information contained in the cover letter shall clearly identify violations of the WDRs, discuss corrective actions taken or planned and the proposed time schedule of corrective actions. Identified violations should include a description of the requirement that was violated and a description of the violation. Monitoring results must be reported on forms approved by this

Regional Water Board. Self Monitoring Reports shall be submitted to the addresses listed in *Table 10. Regional Water Board Address*.

Table 10. Regional Water Board Address

Submit monitoring reports to:
California Regional Water Quality Control Board San Diego Region 9174 Sky Park Court, Suite 100 San Diego, California 92123-4340 Attention: Executive Officer

Notifications required to be provided to this Regional Water Board shall be made to:

Telephone – (858) 467-2952
Facsimile – (858) 571-6972

C. Discharge Monitoring Reports

1. As described in Section VII.B.1 of this MRP, at any time during the term of this permit, the Discharger, after notification by the State or Regional Water Board, may be required to electronically submit self-monitoring reports. Until such time as electronic submission of self monitoring reports is required, the Discharger shall submit discharge monitoring reports (DMRs) in accordance with the requirements described further below.

2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharge shall submit the original DMR and one copy to the address listed *Table 11. State Water Board Address*.

Table 11. State Water Board Address

Submit DMRs to:
State Water Resources Control Board Discharge Monitoring Report Processing Center Post Office Box 671 Sacramento, CA 95812

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self generated or modified cannot be accepted.

D. Other Reports

The City shall provide annual monitoring reports to this Regional Water Board regarding the industrial users of the IBCS. The annual report should:

1. Identify industrial discharger Orders issued to qualifying dischargers,

2. Identify industries discharging to the IBCS and flows contributed by each IBCS discharger, and

3. Summarize the compliance status of each IBCS discharger with City-assigned industrial effluent limitations.